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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

Sim, Gee-Kee
Yang, Shumin
(as amended)

Patent No.: 6,852,847 B1

Issued: February 8, 2005

Serial No.: 09/646,561

Filed: February 1, 2001

Atty. File No.: IM-1-C1-PUS

For: "CANINE AND FELINE B7-2 NUCLEIC ACID MOLECULES AND USES THEREOF"

Group Art Unit: 1644

Examiner: Roark, Jessica

REQUEST FOR CERTIFICATE OF CORRECTION FOR USPTO MISTAKES

CERTIFICATE OF MAILING

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE U.S. POSTAL SERVICE ADDRESSED TO COMMISSIONER FOR PATENTS, ATTN: CERTIFICATE OF CORRECTION BRANCH, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450, THIS 19 DAY OF FEBRUARY 2008.

HESKA CORPORATION

By: Susan Gordon
Susan Gordon

Commissioner for Patents
ATTN: Certificate of Correction Branch
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

This is a request for a Certificate of Correction under 37 C.F.R. 1.322(a). Attached is Form PTO-1050. The corrections requested are as follows:

On page one, item (75), please remove inventor Karen S. Sellins.

Support for this request can be found in Applicants' Petition to Correct Inventorship, filed September 18, 2003. The Examiner acknowledged Applicants' Petition in the Advisory Action, dated October 21, 2003, and in the Notice of Allowance, dated November 20, 2003, but requested a corrected Declaration. Applicants submitted a new Declaration on February 12, 2004, which was acknowledged by the Examiner in an Office Communication, dated April 25, 2005. The new Declaration was accepted and acknowledged and Applicants' Deposit Account

was debited for the Petition fee, but the inventor change was never entered. Applicants request that this change be noted on a Certificate of Correction.

Column 125, line 22, claim 1, please replace "length to of a nucleic acid sequence selected from the" with --length of a nucleic acid sequence selected from the--.

Column 125, line 27, claim 1, please replace "against a canine protein having the amino acid" with --against a protein having the amino acid--.

Column 126, line 19, claim 4, please replace "sequence is selected from the group consisting of" with --sequence selected from the group consisting of--.

Column 126, line 27, claim 5, please replace "stimulated T cell proliferation; and" with --stimulates T cell proliferation; and--.

Support for the above corrections to the claims can be found in Applicants' Second Amendment and Response After Final, filed October 17, 2003; acknowledged by the Examiner in the Notice of Allowability, dated November 20, 2003.

Applicants do not believe any fees are due with this correspondence, but in the event fees are due, please debit Deposit Account No. 081930.

Respectfully submitted,

Dated: February 15, 2008

By: _____

Richard J. Stern, Ph.D.
Registration No. 50,668
Heska Corporation
3760 Rocky Mountain Avenue
Loveland, Colorado 80538
Telephone: (970) 493-7272, ext. 4174
Facsimile: (970) 619-3011

(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : **6,852,847 B1**

DATED : **February 8, 2005**

INVENTOR(S) : **Gek-Kee Sim, Shumin Yang**

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On cover page, item (75), please remove Inventor: Karen S. Sellins

Column 125, line 22, please replace "length to of a nucleic acid sequence selected from the" with --length of a nucleic acid sequence selected from the--.

Column 125, line 27, please replace "against a canine protein having the amino acid" with --against a protein having the amino acid--.

Column 126, line 19, please replace "sequence is selected from the group consisting of:" with --sequence selected from the group consisting of:--.

Column 126, line 37, please replace "stimulated T cell proliferation; and" with --stimulates T cell proliferation; and--.

MAILING ADDRESS OF SENDER (Please do not use customer number

Heska Corporation
Legal Department
3760 Rocky Mountain Ave.
Loveland, CO 80538

PATENT NO. **6,852,847 B1**

No. of additional copies

ATTN: Mail Stop AF
PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

Sim, Gee-Kee
Yang, Shumin
Sellins, Karen S.

Serial No.: 09/646,561

Filing Date: March 19, 1999

Atty. File No.: IM-1-C1-PUS
(formerly HKZ-029CPUS)

For: "CANINE AND FELINE B7-2 NUCLEIC ACID MOLECULES AND USES THEREOF"

Group Art Unit: 1644

Examiner: Roark, Jessica H.

PETITION TO CORRECT INVENTORSHIP UNDER 37 CFR 1.48(a)

CERTIFICATE OF MAILING

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE U.S. POSTAL SERVICE AS FIRST CLASS MAIL ADDRESSED TO MAIL STOP AF, COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VIRGINIA 22313-1450, THIS 18 DAY OF SEPTEMBER 2003.

HESKA CORPORATION

By: Susan A. Gordon
Susan A. Gordon

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

In accordance with 37 CFR 1.48(a), Applicants hereby petition the above-referenced patent application be amended to delete as an inventor Karen S. Sellins, having a residence of 1919 Enchantment Drive, Fort Collins, CO 80525.

The correct named inventors should be:

Gek-Kee Sim
Shumin Yang

Applicants have included the following:

(1) a statement from the person being deleted that the error in inventorship occurred without any deceptive intent on her part;

(2) a Declaration by the actual inventor in accordance with 37 CFR 1.63. Applicants note that although inventor Gek-Kee Sim is listed on the Declaration, the Declaration has only been signed by inventor Shumin Yang. The USPTO previously granted a petition to accept the Application without the signature of co-inventor Gek-Kee Sim based on evidence showing co-inventor Gek-Kee Sim refused to execute the Application. Copies of supporting documentation to this effect have been included herewith; and

(3) written consent of the assignee as indicated by signature of the undersigned on behalf of Assignee, Heska Corporation.

Applicants authorize the petition fee of $130, as required under 37 CFR § 1.17(i), to be charged to Deposit Account 081930.

The Examiner is invited to contact the undersigned should any issues remain.

Respectfully submitted,

Dated: September 18, 2003

By: Richard J. Stern

Richard J. Stern, Ph.D.
Registration No. 50,668
Heska Corporation
1613 Prospect Parkway
Fort Collins, Colorado 80525
Telephone: (970) 493-7272
Facsimile: (970) 491-9976

ATTN: Mail Stop AF
PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

Sim, Gee-Kee
Yang, Shumin
Sellins, Karen S.

Serial No.: 09/646,561

Filing Date: March 19, 1999

Atty. File No.: IM-1-C1-PUS
(formerly HKZ-029CPUS)

For: "CANINE AND FELINE B7-2 NUCLEIC ACID MOLECULES AND USES THEREOF"

Group Art Unit: 1644

Examiner: Roark, Jessica H.

STATEMENT OF LACK OF DECEPTIVE INTENT
Under 37 CFR 1.48(a)

CERTIFICATE OF MAILING

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE U.S. POSTAL SERVICE AS FIRST CLASS MAIL ADDRESSED TO MAIL STOP AF, COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VIRGINIA 22313-1450, THIS 18 DAY OF SEPTEMBER 2003.

HESKA CORPORATION

By: Susan A. Gordon
Susan A. Gordon

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

The undersigned hereby states her erroneous inclusion as an inventor in the above-referenced Application occurred without deceptive intention.

Respectfully submitted,

Dated: September 15, 2003

By: Karen S. Sellins

Karen S. Sellins, Ph.D.
1919 Enchantment Drive
Fort Collins, Colorado 80525

COPY

RULE 63 (37 CFR § 1.63)
DECLARATION
FOR PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled "CANINE AND FELINE B7-2 NUCLEIC ACID MOLECULES AND USES THEREOF", the specification of which was filed on March 19, 1999, receiving Serial No. 09/646,561, and identified as Attorney File No. IM-1-C1-PUS (formerly HKZ-039CPUS).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to patentability in accordance with 37 CFR §§ 1.56(a) and (b) as set forth on the attached sheet indicated Page 3 hereof and which I have read.

I hereby claim foreign priority benefits under 35 U.S.C. 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
Number	Country	Day/Month/Year Filed	Yes	No
PCT/US99/06187	PCT	19 March 1999	Yes	

I hereby claim the benefit under 35 U.S.C. 120 of all United States and PCT international applications listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in such prior applications in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information material to patentability in accordance with 37 CFR §§ 1.56(a) and (b) which occurred between the filing date(s) of the prior application(s) and the national or PCT international filing date of this application:

Application Serial No.	Filing Date
09/062,597	17 April 1998

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

1) Inventor's Signature _____ Date 9/12/03

Inventor's Name (typed): Shumin Yang, Ph.D.

Citizenship: United States of America

Residence: 765 San Antonio Road, #~~73~~ 51
Palo Alto, California 94303

Post Office Address: Same as Residence

2) Inventor's Signature _____ Date _____

Inventor's Name (typed): Gek-Kee Sim, Ph.D.

Citizenship: United States of America

Residence: 543 Franklin St.
Denver, Colorado 80218

Post Office Address: Same as Residence

37 CFR §§ 1.56(a) and (b)
DUTY TO DISCLOSE INFORMATION MATERIAL
TO PATENTABILITY

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is cancelled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

(1) prior art cited in search reports of a foreign patent office in a counterpart application, and

(2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

(1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or

(2) It refutes, or is inconsistent with, a position the applicant takes in:

(i) Opposing an argument of unpatentability relied on by the Office, or

(ii) Asserting an argument of a patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.*

*Note, 37 CFR §1.97(h) states: "The filing of an information disclosure statement shall not be construed to be an admission that the information cited in the statement is, or is considered to be, material to patentability as defined in §1.56(b)."

NOV 2 9 2001

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UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, DC 20231
www.uspto.gov

Elizabeth A. Hanley
LaHive & Cockfield. LLP
28 State Street
Boston, MA 02109

COPY

In re Application of
Gee-Kee Sim et al.
Application No.: 09/646,561
PCT No.: PCT/US99/06187
Int. Filing Date: 19 March 1999
Priority Date: 19 March 1998
Attorney's Docket No.: HKZ-029CPUS
For: T CELL COSTIMULATORY PROTEINS, SEQUENCES AND USES THEREOF

Dear Dr. Sim:

You are named as an inventor in the above identified United States patent application, filed under the provisions of 37 CFR 1.47(a) and 35 U.S.C. 116. Should a patent be granted, you will be designated as an inventor.

As a named inventor, you are entitled to inspect any paper in the file wrapper of the application, order copies of all or any part thereof (at a prepaid cost per 37 CFR 1.19) or to make your position of record in the application. Alternatively, you may arrange to do any of the preceding through a registered patent agent or attorney presenting written authorization from you. If you care to join in the application, counsel of record (see below) would presumably assist you. Joining in the application would entail the filing of an appropriate oath or declaration by you pursuant to 37 CFR 1.63.

Debra S. Brittingham
PCT Legal Examiner
PCT Legal Office
Telephone: (703) 308-3401
Facsimile: (703) 308-6459

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Publication

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UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, DC 20231
www.uspto.gov

Elizabeth A. Hanley
LaHive & Cockfield. LLP
28 State Street
Boston, MA 02109

In re Application of
Gek-Kee Sim et al.
Application No.: 09/646,561
PCT No.: PCT/US99/06187
Int. Filing Date: 19 March 1999
Priority Date: 19 March 1998
Attorney's Docket No.: HKZ-029CPUS
For: T CELL COSTIMULATORY PROTEINS, SEQUENCES AND USES THEREOF

: DECISION ON
:
: RENEWED PETITION
:
: UNDER 37 CFR 1.47(a)
:

This is a decision in response to the declaration and renewed petition filed under 37 CFR 1.47(a) on 17 September 2001, to accept the application without the signature of co-inventor Gee-Kee Sim. The required $130 petition fee has been received.

BACKGROUND

On 19 March 1999, applicants filed international application PCT/US99/06187, which claimed priority of an earlier US application filed 17 April 1998 and an earlier provisional application filed 19 March 1998. A copy of the international application was communicated to the United States Patent and Trademark Office from applicant on 19 September 2000. A Demand for international preliminary examination, in which the United States was elected, was filed on 19 October 1999. Accordingly, the thirty-month period for paying the basic national fee in the United States expired at midnight on 19 September 2000.

On 19 September 2000, applicant filed a transmittal letter for entry into the national stage in the United States which was accompanied by, inter alia, the requisite basic national fee as required by 35 U.S.C. 371(c).

On 01 November 2000, the United States Designated/Elected Office mailed a "NOTIFICATION OF MISSING REQUIREMENTS UNDER 35 U.S.C. 371 IN THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)" (Form PCT/EO/EO905), indicating that an oath or declaration and the surcharge for filing the oath or declaration later that 30 months from the priority date as required by 37 CFR 1.492(e) needed to be filed. The notification set a one month time period in which to respond.

(3)

On 01 February 2001, applicant filed a response to the PCT/DO/EO/905 including a petition under 37 CFR 1.47 (a) and the required petition fee, and the required surcharge for filing the declaration later than 30 months from the earliest priority date.

A decision of the petition was mailed to applicant on 17 May 2001 indicating that before a refusal to sign a declaration can be alleged, it must be demonstrated that a *bona fide* attempt was made to present a copy of the application.

On 17 September 2001, applicant filed the current Renewed Petition under 37 CFR 1.47(a) and a $130 fee; the declaration of Timothy McCutcheon including various exhibits; the unexecuted declaration, petition and power of attorney; a request for a two-month extension of time and the required fee; and, a petition to revive and the appropriate fee.

DISCUSSION

A petition under 37 CFR 1.47(a) must be accompanied by (1) the fee under 37 CFR 1.17(h), (2) factual proof that the missing joint inventor refuses to execute the application or cannot be reached after diligent effort, (3) a statement of the last known address of the missing inventor, and (4) an oath or declaration by each 37 CFR 1.47(a) applicant on his or her own behalf and on behalf of the non-signing joint inventor.

With respect to item (1), the $130 petition fee under 37 CFR 1.17(h) was included with the original petition. Therefore, no additional fee is due. The enclosed $130 fee will be refunded to applicant's deposit account.

With respect to item (2), Mr. Timothy McCutcheon states that he left various email and voice messages on Dr. Sim's telephone. Dr. Sim did not respond to any of the messages. Further, on 26 July 2001, Mr. McCutcheon sent Dr. Sim, by Federal Express, a spiral bound copy of the application as well as the assignment and declaration. On 27 July 2001, G. Sim signed for this package as evidenced by the "Track Response."

With respect to item (3), Dr. Sim's last known address is furnished in Mr. McCutcheon's declaration.

Regarding item (4), applicants included a Declaration signed by two of the three co-inventors with the original petition. The nonsigning co-inventor's name, residence, post office address and citizenship are typed on the declaration. This declaration satisfies the requirements of section 409.03(a) of the Manual of Patent Examining Procedure (MPEP) and is in compliance with 37 CFR 1.497(a) and (b). Thus, item (4) has been satisfied.

With respect to applicant's petition to revive, no such petition is necessary. Therefore, the fee of $620 will be refunded to applicant's deposit account.

CONCLUSION

The petition under 37 CFR 1.47(a) is GRANTED.

Applicant's **DEPOSIT ACCOUNT 12-0080** will be **refunded $750.**

This application is being returned to the United States Designated/Elected Office for processing in accordance with this decision; and, if appropriate, a Notification of Acceptance of Application (Form PCT/DO/EO/903) will be mailed showing a 35 U.S.C. 371 date of 01 February 2001.

Debra S. Brittingham
PCT Special Programs Examiner
PCT Legal Office

Leonard Smith
PCT Legal Examiner
PCT Legal Office

DSB/LS:dsb
Telephone: (703) 308-3401
Facsimile: (703) 308-6459

UNITED STATES PATENT AND TRADEMARK OFFICE

MONTHLY STATEMENT OF DEPOSIT ACCOUNT

To replenish your deposit account, detach and return top portion with your check. Make check payable to Director of Patents & Trademarks.

HESKA CORPORATION
CAROL TALKINGTON VERSER, PH.D.
1613 PROSPECT PARKWAY

FORT COLLINS CO 80525-9769

FINA

Under Secretary of Commerce for Intellectual Property and
Director of the United States Patent and Trademark Office
Washington, DC 20231
www.uspto.gov

Account No.
081930
Date
9-30-03
Page
1

PLEASE SEND REMITTANCES TO:
U. S. Patent and Trademark Office
P.O. Box 70541
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	5559.00	1275.00	1365.00	5649.00

MS020A (2/2003)

*** O.D. INDICATES OVERDRAWN

Heska Corporation
Intellectual Property Dept.
1613 Prospect Parkway
Fort Collins, CO 80525

DATE: September 18, 2003
APPLICANT: Gek-Kee Sim, Shumin Yang, Karen S. Sellins
SERIAL NO.: 09/646,561
ATTY. FILE NO.: IM-1-C1-PUS
TITLE: "CANINE AND FELINE B7-2 NUCLEIC ACID MOLECULES AND USES THEREOF

RECEIPT IS HEREBY ACKNOWLEDGED OF: Amendment and Response; Petition to Correct Inventorship Under 37 CFR 1.48(a); Declaration; Statement of Lack of Deceptive Intent; copy of Decision on Renewed Petition Under 37 CFR 1.47(a); copy of USPTO letter to inventor Gek-Kee Sim; all deposited with the U.S. Postal Service as First Class Mail this date.

ATTN: MAIL STOP AF
PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

Sim, Gee-Kee
Yang, Shumin
Sellins, Karen S.

Serial No.: 09/646,561

Int'l Filing Date: March 19, 1999

National Phase Filed: 02/01/2001

Atty. File No.: IM-1-C1-PUS
(formerly HKZ-029CPUS)

For: "CANINE AND FELINE B7-2 NUCLEIC ACID MOLECULES AND USES THEREOF"

Group Art Unit: 1644

Examiner: Jessica H. Roark

COPY

SECOND AMENDMENT AND RESPONSE AFTER FINAL
Under (37 CFR 1.111)

CERTIFICATE OF FACSIMILE TRANSMISSION

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING FACSIMILE TRANSMITTED TO EXAMINER JESSICA ROARK, FAX NO. (703)-872-9306, ADDRESSED TO MAIL STOP AF, COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VIRGINIA 22313-1450, THIS 17TH DAY OF OCTOBER 2003.

HESKA CORPORATION

By: Susan A. Gordon
Susan A. Gordon

See this for corrections to the claims

MAIL STOP AF
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

In response to the Final Office Action mailed from the U.S. Patent and Trademark Office on June 18, 2003, in conjunction with the phone conversations with the Examiner on October 16, 2003, Applicants request reconsideration based on the following amendments and remarks. Applicants also attach a petition for a one-month extension of time, thereby extending the period for reply from September 18, 2003 until October 18, 2003. Applicants hereby authorize the USPTO to charge the $55 one-month extension fee to Deposit Account No. 081930.

AMENDMENTS

In the Claims:

Please amend Claims as follows:

Claims 1-39 (Canceled)

40. (Currently amended) An isolated nucleic acid molecule selected from the group consisting of:

(a) a nucleic acid molecule having a nucleic acid sequence that is at least about 95 percent identical over the full length ~~to~~ of a nucleic acid sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:9, SEQ ID NO:16, SEQ ID NO:19, SEQ ID NO:25, and SEQ ID NO:28~~, SEQ ID NO:30, and SEQ ID NO:33~~, wherein the isolated nucleic acid molecule encodes a protein that elicits an immune response against a ~~naturally-occurring canine or feline B7-2~~ protein having the amino acid sequence of SEQ ID NO:7, SEQ ID NO:17 or SEQ ID NO:28 or wherein said encoded protein, in conjunction with engagement of a T cell receptor with a major histocompatability molecule complexed with a peptide, stimulates T cell proliferation; and

(b) a nucleic acid molecule fully complementary to the nucleic acid molecule of (a).

41. (Currently amended) An isolated nucleic acid molecule selected from the group consisting of:

(a) a nucleic acid molecule having a nucleic acid sequence that is at least about 95% identical over the full length of SEQ ID NO:33, wherein the isolated nucleic acid molecule encodes a protein that elicits an immune response against a protein having the amino acid sequence of SEQ ID NO:34 or wherein said encoded protein, in conjunction with engagement of a T cell receptor with a major histocompatability molecule complexed with a peptide, stimulates T cell proliferation; ~~that encodes a naturally-occurring soluble canine or feline B7-2 protein; and~~

(b) a nucleic acid molecule comprising a nucleic acid sequence encoding a protein that is at least about 95% identical over the full-length of SEQ ID NO:34, wherein said encoded protein elicits an immune response against a protein having the amino acid sequence of SEQ ID NO:34 or wherein said encoded protein, in conjunction with engagement of a T cell

receptor with a major histocompatability molecule complexed with a peptide, stimulates T cell proliferation;

(c) a nucleic acid molecule comprising the nucleic acid sequence of SEQ ID NO:30; and,

(d) a nucleic acid molecule fully complementary to the nucleic acid molecule of (a), (b) or (c).

42. (Currently amended) The isolated nucleic acid molecule of Claim 40, wherein said nucleic acid molecule comprises a nucleic acid sequence ~~is~~ selected from the group consisting of:

(a) SEQ ID NO:6, SEQ ID NO:9, SEQ ID NO:16, SEQ ID NO:19, SEQ ID NO:25, SEQ ID NO:28~~, SEQ ID NO:30, SEQ ID NO:33~~; and

(b) a nucleic acid ~~molecule~~ sequence fully complementary to the nucleic acid sequence ~~molecule~~ of (a).

43. (Currently amended) The isolated nucleic acid molecule of Claim 41, wherein said nucleic acid molecule comprises a nucleic acid sequence ~~is~~ selected from the group consisting of:

~~SEQ ID NO:6, SEQ ID NO:9, SEQ ID NO:16, SEQ ID NO:19, SEQ ID NO:25, SEQ ID NO:28,~~

(a) SEQ ID NO:30, ~~and~~ SEQ ID NO:33; and.

(b) a nucleic acid ~~molecule~~ sequence fully complementary to the nucleic acid ~~molecule~~ sequence of (a).

44. (Currently amended) An isolated nucleic acid molecule selected from the group consisting of:

(a) a nucleic acid molecule having a nucleic acid sequence encoding a B7-2 protein that is at least about 95 ~~percent~~% identical ~~to~~ over the full length of an amino acid sequence selected from the group consisting of SEQ ID NO:7, SEQ ID NO:17, and SEQ ID NO:26~~, SEQ ID NO:31 and SEQ ID NO:34~~, wherein said encoded B7-2 protein elicits an immune response against a ~~naturally-occurring canine or feline B7-2~~ protein having the amino acid sequence of SEQ ID NO:7, SEQ ID NO:17 or SEQ ID NO:28 or wherein said encoded B7-2

protein, in conjunction with engagement of a T cell receptor with a major histocompatability molecule complexed with a peptide, stimulates T cell proliferation; and

(b) a nucleic acid molecule fully complimentary to the nucleic acid molecule of (a).

45. (Currently amended) The isolated nucleic acid molecule of Claim 44, wherein said encoded B7-2 protein has an amino acid sequence ~~is~~ selected from the group consisting of SEQ ID NO:7, SEQ ID NO:17~~,~~ and SEQ ID NO:26~~, SEQ ID NO:31 and SEQ ID NO:34~~

46. (Currently amended) ~~An~~ The isolated nucleic acid molecule of Claim 41, ~~comprising an allelic variant of the nucleic acid molecule of Claims 40-45,~~ wherein said ~~variant~~ nucleic acid molecule comprises a nucleic acid sequence encoding ~~encodes~~ a protein ~~that elicits an immune response against a naturally-occurring canine or feline B7-2 protein or stimulates T cell proliferation~~ having the amino acid sequence of SEQ ID NO:31 or SEQ ID NO:34.

47. (Currently amended) An isolated nucleic acid molecule selected from the group consisting of:

(a) an isolated nucleic acid molecule consisting of a fragment of SEQ ID NO:6, SEQ ID NO:9, SEQ ID NO:16, SEQ ID NO:19, SEQ ID NO:25~~,~~ or SEQ ID NO:28~~, SEQ ID NO:30 or SEQ ID NO:33~~, wherein said fragment is ~~at least~~ greater than about ~~12~~ 50 nucleotides of SEQ ID NO:6, SEQ ID NO:9, SEQ ID NO:16, SEQ ID NO:19, SEQ ID NO:25~~,~~ or SEQ ID NO:28~~, SEQ ID NO:30 or SEQ ID NO:33~~ ; and,

(b) a nucleic acid molecule fully complementary to the nucleic acid molecule of (a).

48. (Canceled)

49. (Canceled)

50. (Previously presented) A composition comprising the isolated nucleic acid molecule as specified in any one of Claims 40-~~49~~ 47 and an excipient.

51. (Currently amended) A method to produce a canine or feline B7-2 protein, said method comprising culturing a cell capable of expressing said B7-2 protein, said B7-2 protein being encoded by ~~a nucleic acid molecule selected from the group consisting of:~~
a nucleic acid molecule having a nucleic acid sequence that is at least about 95 ~~percent~~% identical over the full length ~~to~~ of a nucleic acid sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:9, SEQ ID NO:16, SEQ ID NO:19, SEQ ID NO:25~~,~~ and SEQ ID NO:28, wherein said encoded protein elicits an immune response against a protein having the amino acid sequence of SEQ ID NO:7, SEQ ID NO:17 or SEQ ID NO:28 or wherein said encoded protein, in conjunction with engagement of a T cell receptor with a major histocompatability molecule complexed with a peptide, stimulates T-cell proliferation~~, SEQ ID NO:30, and SEQ ID NO:33; and~~
~~a nucleic acid molecule that encodes a naturally-occurring soluble canine or feline B7-2 protein~~.

52. (Currently amended) The method of Claim 51, wherein said nucleic acid molecule encodes a B7-2 protein that is at least about 95 ~~percent~~% identical over the full length of an amino acid sequence selected from the group consisting of SEQ ID NO:7, SEQ ID NO:17~~,~~ and SEQ ID NO:26~~, SEQ ID NO:31 and SEQ ID NO:34~~.

53. (Currently amended) The method of Claim ~~50~~ 51, wherein said nucleic acid molecule ~~is~~ comprises a nucleic acid sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:9, SEQ ID NO:16, SEQ ID NO:19, SEQ ID NO:25~~,~~ and SEQ ID NO:28~~,~~ ~~SEQ ID NO:30 and SEQ ID NO:33~~.

54. (Currently amended) The method of Claim ~~50~~ 51, wherein said nucleic acid molecule comprises a nucleic acid sequence that encodes a protein having an amino acid sequence selected from the group consisting of SEQ ID NO:7, SEQ ID NO:17~~,~~ and SEQ ID NO:26~~, SEQ ID NO:31 and SEQ ID NO:34~~.

55. (Currently amended) ~~The~~ A method ~~of Claim 50, wherein the nucleic acid molecule comprises an allelic variant of the nucleic acid molecule of Claims 40-49, wherein said nucleic acid molecule encodes a protein that elicits an immune response against a naturally-~~

~~occurring~~ to produce a canine or feline B7-2 protein ~~or stimulates T cell proliferation~~ said method comprising:

(a) culturing a cell comprising the isolated nucleic acid molecule of Claim 41, wherein said cell is capable of expressing said B7-2 protein; and

(b) recovering said canine or feline B7-2 protein.

56. (Currently amended) A method to produce a canine or feline B7-2 peptide, said method comprising culturing a cell capable of expressing said B7-2 peptide, said B7-2 peptide being encoded by a nucleic acid molecule consisting of a fragment of SEQ ID NO:6, SEQ ID NO:9, SEQ ID NO:16, SEQ ID NO:19, SEQ ID NO:25~~,~~ and SEQ ID NO:28~~, SEQ ID NO:30 or SEQ ID NO:33~~, wherein said fragment is ~~at least~~ greater than about ~~12~~ 50 nucleotides of SEQ ID NO:6, SEQ ID NO:9, SEQ ID NO:16, SEQ ID NO:19, SEQ ID NO:25~~,~~ and SEQ ID NO:28~~, SEQ ID NO:30 or SEQ ID NO:33.~~.

57. (Canceled)

58. (Canceled)

59. (Previously presented) A recombinant molecule comprising a nucleic acid ~~molecule~~ sequence as set forth in any one of Claims 40-~~49~~ 47 operatively linked to a transcription control sequence.

60. (Previously presented) A recombinant virus comprising a nucleic acid molecule as set forth in any one of Claims 40-~~49~~ 47.

61. (Previously presented) A recombinant cell comprising a nucleic acid molecule as set forth in any one of Claims 40-~~49~~ 47.

REMARKS

Claims 48, 49, 57 and 58 have been canceled.

Claim 40 has been amended so that SEQ ID NO's 30 & 33 no longer appear in the language of the claim. Reference to percent identify now refers to the full length "of" a nucleic acid sequence selected from the group. In addition, the function of eliciting an immune response now refers to proteins having specific SEQ ID NO's as opposed to referring to "naturally occurring canine or feline B7-2 proteins." Support for such a function can be found in the specification, for example, on page 10, lines 7-28, page 26, lines 14-23, and page 30, lines 3-20. With regard to T-cell proliferation, the language has been altered so that T-cell proliferation now occurs in conjunction with engagement of a T cell receptor with a major histocompatability molecule complexed with a peptide. Support for such language can be found in the specification, for example, on page 1, lines 20-24. Finally, part (b) now specifies the sequence be "fully" complementary.

Claim 41 has been amended to remove language referring to naturally occurring B7-2 proteins. In addition, the claim now specifies nucleic acid molecules 95% identical to SEQ ID NO:33, nucleic acid molecules encoding a protein 95% identical to SEQ ID NO:34 and nucleic acid molecules comprising the sequence of SEQ ID NO:30. The Claim also now specifies the function of eliciting an immune response or stimulating T-cell proliferation. With regard to T-cell proliferation, the language has been altered so that T-cell proliferation now occurs in conjunction with engagement of a T cell receptor with a major histocompatability molecule complexed with a peptide. Finally, part (b) now specifies the sequence be "fully" complementary.

Claim 42 has been amended so that SEQ ID NO's 30 & 33 no longer appear in the language of the claim. Part (d) now specifies the sequence be "fully" complementary.

Claim 43 has been amended so that SEQ ID NO's 6, 9, 16, 19, 25 and 28 no longer appear in the language of the claim. Part (b) now specifies the sequence be "fully" complementary.

Claim 44 has been amended to include nucleic acid molecules fully complimentary to those already described by the claim. In addition, the function of eliciting an immune response now refers to proteins having specific SEQ ID NO's as opposed to referring to "naturally occurring canine or feline B7-2 proteins." With regard to T-cell proliferation, the language has

been altered so that T-cell proliferation now occurs in conjunction with engagement of a T cell receptor with a major histocompatability molecule complexed with a peptide.

Claim 45 has been amended so that SEQ ID NO's 31 & 34 no longer appear in the language of the claim.

Claim 46 has been amended so that it no longer refers to allelic variants. The claim now specifies the nucleic acid molecules encode proteins having the specified amino acid sequences.

Claim 47 has been re-drafted to clarify the language of the claim. In addition, reference to SEQ ID NO's 30 & 33 has been removed from the claim. Also, the length of the fragments has been changed to "greater than about 50 nucleotides". Support for such fragments can be found in the specification, for example, on page 16, lines 24-30. Finally, the claim now also refers to nucleic acid molecules fully complementary to the already specified SEQ ID NO's.

Claim 50 has been amended to read "as specified in any one of" when referring to Claims 40-47.

Claim 51 has been amended so that SEQ ID NO's 30 & 33 no longer appear in the language of the claim. In addition, reference to naturally occurring B7-2 proteins has been removed from the claim. Also, reference to percent identify now refers to the full length "of" a nucleic acid sequence selected from the group. Finally, functional language, identical to that listed for example in Claim 40, has been added to the claim.

Claim 52 has been amended so that SEQ ID NO's 31 & 34 no longer appear in the language of the claim.

Claim 53, has been amended so that SEQ ID NO's 30 & 33 no longer appear in the language of the claim.

Claim 54 has been amended so that SEQ ID NO's 31 & 34 no longer appear in the language of the claim.

Claim 55 has been amended to remove reference to allelic variants and naturally occurring B7-2 proteins. The claim now specifies a method to produce a protein using the nucleic acid molecule of Claim 41.

Claim 56 has been amended so that SEQ ID NO's 30 & 33 no longer appear in the language of the claim. Also, the length of the fragments has been changed to "greater than about 50 nucleotides".

Claims 59-61 have been amended to correct improper multiple dependencies. Specifically, the Claims now refer to "any one of" Claims 40-47.

Claim Objections

With respect to the improper dependencies noted by the Examiner, Applicants note Claim 57 has been canceled. Additionally, Claims 46, 50, 55 and 59-61 have been amended to either remove or correct the multiple dependency language.

With respect to Claim 43, the wayward period has been dealt with and should no longer present a problem.

Rejections Under 35 U.S.C. §112, second paragraph

The Examiner has rejected Claim 43 for lack of antecedent basis for SEQ ID NO's encoding non-soluble B7-2 proteins, since Claim 41, from which Claim 43 depends, requires the nucleic acid molecules encode a soluble B7-2 protein. Applicants note Claim 41 has been amended to remove the requirement that the encoded proteins be soluble.

The Examiner has also rejected Claims 53, 54 and 55 for referring to the method of Claim 50, when in fact, Claim 50 is to composition. Applicants note the dependency in Claims 53-55 has been changed so these claims now depend from Claim 51 which specifies a method.

Rejections Under 35 U.S.C. §112 second paragraph

The Examiner has rejected Claims 40-46, 50-55 and 59-61 for lack of written description and lack of enablement. Specifically, the Examiner states some claims to nucleic acid molecules about 95% identical to reference molecules lack a functional description and therefore have not been adequately described or enabled. In addition, there is not adequate written description or enablement for allelic variants or "naturally occurring canine or feline B7-2 proteins."

Applicants note that functional language has been added to claims, in particular Claims 51-52, specifying nucleic acids about 95% identical to reference sequences. In addition, although Applicants believe the use of the term "allelic variant" is supported in the specification, all reference to allelic variants have been removed from the claim set. Likewise, although Applicants believe "naturally occurring canine and feline B7-2 proteins" are adequately described and enabled in the specification, in order to expedite prosecution, Applicants have replaced all such language in the claims with language that references a particular SEQ ID NO.

Rejections Under 35 U.S.C §§ 102 and 103

The Examiner has rejected Claims 40, 44, 46-52 and 55-61 as being anticipated by Collisson stating that Collisson is available as a reference as of May 1, 1998. Collisson teaches SEQ ID NO:5, a nucleic acid sequence encoding a feline B7-2 protein, that is 98% identical to the coding region of instant SEQ ID NO:28 and 95% identical to instant SEQ ID NO:26.

Applicants note that SEQ ID NO's 1-29 were disclosed on April 17, 1998, prior to Collissons filing date of May 1, 1998. It is only SEQ ID NO's 31-35 that were disclosed on March 19, 1999 which is after Collissons priority date. Applicants note that the Claims have been amended so that SEQ ID NO's 31-35 are not claimed in the same claim as SEQ ID NO's 1-29. For example, Claim 40 now lists only SEQ ID NO's 6, 9, 16, 19, 25 and 28 and therefore should be accorded a priority date of April 17, 1998 which is earlier than Collissons priority date. With respect to SEQ ID NO's 30-35, Claim 41 claims nucleic acid sequences at least about 95% identical to SEQ ID NO:33 and amino acid sequences 95% identical to SEQ ID NO:34. Applicants note that Collisson cannot be considered prior art to these sequences for the following reasons.

There are two forms of the B7-2 protein, a full length form, which contains a transmembrane domain, and a soluble form lacking the transmembrane domain. The soluble form of the B7-2 protein is encoded by a nucleic acid molecule created by alternative splicing of the cDNA encoding the full-length form. SEQ ID NO:5 disclosed by Collisson is the sequence of the gene encoding the full-length form of the feline B7-2 protein. Instant SEQ ID NO:33 encodes the soluble form of the feline B7-2 protein and therefore lacks the sequences encoding the transmembrane domain which are present in SEQ ID NO:5. Collisson discloses no such sequence. As a result of its lacking the transmembrane domain coding region, SEQ ID NO:33 shares less than 95% identity with SEQ ID NO:5 of Collisson. Below is an alignment of SEQ ID NO:33 with the corresponding region of SEQ ID NO:5. This alignment demonstrates these two sequences share, at best, 69% identity:

align Results

Please site: *Pearson, W.R., Wood, T., Zhang, Z., and Miller, W. (1997) Comparison of DNA sequences with protein sequences, Genomics 46: 24-36*

```
>_ SIN5                                                    509 nt vs.
>_ SIN33                                                   359 nt
scoring matrix: , gap penalties: -12/-2
69.0% identity;          Global alignment score: 1056

               10        20        30        40        50        60
SIN05  ATACAAGGTTACCCAGAACCTAAGGAGATGTATTTTCAGCTAAACACTGAGAATTCAACT
       ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
SIN33  ATACAAGGTTACCCAGAACCTAAGGAGATGTATTTTCAGCTAAACACTGAGAATTCAACT
               10        20        30        40        50        60

               70        80        90       100       110       120
SIN05  ACTAAGTATGATACTGTCATGAAGAAATCTCAAAATAATGTGACAGAACTGTACAACGTT
       ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
SIN33  ACTAAGTATGATACTGTCATGAAGAAATCTCAAAATAATGTGACAGAACTGTACAACGTT
               70        80        90       100       110       120

              130       140       150       160       170       180
SIN05  TCTATCAGCTTGCCTTTTTCAGTCCCTGAAGCACACAATGTGAGCGTCTTTTGTGCCCTG
       ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
SIN33  TCTATCAGCTTGCCTTTTTCAGTCCCTGAAGCACACAATGTGAGCGTCTTTTGTGCCCTG
              130       140       150       160       170       180

              190       200       210       220       230       240
SIN05  AAACTGGAGACACTGGAGATGCTGCTCTCCCTACCTTTCAATATAGATGCACAACCTAAG
       :::::::::::::::::::::::::::::::::::::::::::
SIN33  AAACTGGAGACACTGGAGATGCTGCTCTCCCTACCTTTCAATATAGA------------
              190       200       210       220

              250       260       270       280       290       300
SIN05  GATAAAGACCCTGAACAAGGCCACTTCCTCTGGATTGCGGCTGTACTTGTAATGTTTGTT

_      ------------------------------------------------------------


              310       320       330       340       350       360
SIN05  GTTTTTTGTGGGATGGTGTCCTTTAAAACACTAAGGAAAAGGAAGAAGAAGCAGCCTGGC

_      ------------------------------------------------------------


              370       380       390       400       410       420
SIN05  CCCTCTCATGAATGTGAAACCATCAAAAGGGAGAGAAAAGAGAGCAAACAGACCAACGAA
                        ::::::::::::::::::::::::::::::::::::::::::
SIN33  -----------------AACCATCAAAAGGGAGAGAAAAGAGAGCAAACAGACCAACGAA
                        230       240       250       260       270
```

```
            430        440        450        460        470        480
SIN05  AGAGTACCATACCACGTACCTGAGAGATCTGATGAAGCCCAGTGTGTTAACATTTTGAAG
       :::::::::::::::::::::::::::::::::::::::::::: :::::::::::::
SIN33  AGAGTACCATACCACGTACCTGAGAGATCTGATGAAGCCCAGTGTATTAACATTTTGAAG
            280        290        300        310        320        330

            490        500
SIN05  ACAGCCTCAGGGGACAAAAATCAGTAGG-A
       :::::::::: ::::::: : : ::   :
SIN33  ACAGCCTCAGGCGACAAAAGT-ACTACACA
            340        350
```

With respect to SEQ ID NO:30, Applicants note that Claim 41 now claims a nucleic acid sequence comprising the sequence of SEQ ID NO:30. Alignment of SEQ ID NO:30 with the corresponding region of Collissons SEQ ID NO:5 (shown below) demonstrates that these sequences are not 100% identical but, due sequence variation at their 3' ends, are instead 98.4% identical.

align Results

Please site: *Pearson, W.R., Wood, T., Zhang, Z., and Miller, W. (1997) Comparison of DNA sequences with protein sequences, Genomics 46: 24-36*

```
>_ SIN5                                                  509 nt vs.
>_ SIN30                                                 509 nt
scoring matrix: , gap penalties: -12/-2
98.4% identity;          Global alignment score: 1966

             10         20         30         40         50         60
SIN05  ATACAAGGTTACCCAGAACCTAAGGAGATGTATTTTCAGCTAAACACTGAGAATTCAACT
       ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
SIN30  ATACAAGGTTACCCAGAACCTAAGGAGATGTATTTTCAGCTAAACACTGAGAATTCAACT
             10         20         30         40         50         60

             70         80         90        100        110        120
SIN05  ACTAAGTATGATACTGTCATGAAGAAATCTCAAAATAATGTGACAGAACTGTACAACGTT
       ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
SIN30  ACTAAGTATGATACTGTCATGAAGAAATCTCAAAATAATGTGACAGAACTGTACAACGTT
             70         80         90        100        110        120

            130        140        150        160        170        180
SIN05  TCTATCAGCTTGCCTTTTTCAGTCCCTGAAGCACACAATGTGAGCGTCTTTTGTGCCCTG
       ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
SIN30  TCTATCAGCTTGCCTTTTTCAGTCCCTGAAGCACACAATGTGAGCGTCTTTTGTGCCCTG
            130        140        150        160        170        180

            190        200        210        220        230        240
SIN05  AAACTGGAGACACTGGAGATGCTGCTCTCCCTACCTTTCAATATAGATGCACAACCTAAG
       ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
SIN30  AAACTGGAGACACTGGAGATGCTGCTCTCCCTACCTTTCAATATAGATGCACAACCTAAG
            190        200        210        220        230        240
```

```
            250        260        270        280        290        300
SIN05  GATAAAGACCCTGAACAAGGCCACTTCCTCTGGATTGCGGCTGTACTTGTAATGTTTGTT
       ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
SIN30  GATAAAGACCCTGAACAAGGCCACTTCCTCTGGATTGCGGCTGTACTTGTAATGTTTGTT
            250        260        270        280        290        300

            310        320        330        340        350        360
SIN05  GTTTTTTGTGGGATGGTGTCCTTTAAAACACTAAGGAAAAGGAAGAAGAAGCAGCCTGGC
       ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
SIN30  GTTTTTTGTGGGATGGTGTCCTTTAAAACACTAAGGAAAAGGAAGAAGAAGCAGCCTGGC
            310        320        330        340        350        360

            370        380        390        400        410        420
SIN05  CCCTCTCATGAATGTGAAACCATCAAAAGGGAGAGAAAAGAGAGCAAACAGACCAACGAA
       ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
SIN30  CCCTCTCATGAATGTGAAACCATCAAAAGGGAGAGAAAAGAGAGCAAACAGACCAACGAA
            370        380        390        400        410        420

            430        440        450        460        470        480
SIN05  AGAGTACCATACCACGTACCTGAGAGATCTGATGAAGCCCAGTGTGTTAACATTTTGAAG
       :::::::::::::::::::::::::::::::::::::::::::::: ::::::::::::::
SIN30  AGAGTACCATACCACGTACCTGAGAGATCTGATGAAGCCCAGTGTATTAACATTTTGAAG
            430        440        450        460        470        480

            490        500
SIN05  ACAGCCTCAGGGGACAAAAATCAGTAGG-A
       :::::::::::: ::::::: : : ::   :
SIN30  ACAGCCTCAGGCGACAAAAGT-ACTACACA
            490        500
```

Similar result (97.6% identity) are seen if the corresponding protein sequences (SEQ ID NO:6 and SEQ ID NO:31) are aligned.

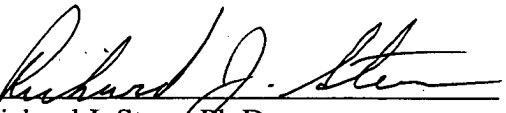
Based on the alignments shown above, Applicants believe that Collisson cannot be considered prior art for the current claims set.

CONCLUSION

In light of the amendments and remarks above, Applicants request the withdrawal of all rejections and solicit an allowance of the newly submitted claims. The Examiner is invited to contact the undersigned should any issues remain.

Respectfully submitted,

Dated: October 17, 2003

By: 

Richard J. Stern, Ph.D.
Registration No. 50,668
Heska Corporation
1613 Prospect Parkway
Fort Collins, Colorado 80525
Telephone: (970) 493-7272
Facsimile: (970) 491-9976

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U.S. Patent Application Serial No: 09/646,561

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09/646,561	02/01/2001	Gee--Kee Sim	HKZ-029CPUS	2245

26949 7590 10/21/2003

HESKA CORPORATION
INTELLECTUAL PROPERTY DEPT.
1613 PROSPECT PARKWAY
FORT COLLINS, CO 80525

EXAMINER	
ROARK, JESSICA H	

ART UNIT	PAPER NUMBER
1644	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action

Advisory Action	Application No.	Applicant(s)	
	09/646,561	SIM ET AL.	
	Examiner	Art Unit	
	Jessica H. Roark	1644	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 22 September 2003 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.

2. ☒ The proposed amendment(s) will not be entered because:

   (a) ☒ they raise new issues that would require further consideration and/or search (see NOTE below);

   (b) ☒ they raise the issue of new matter (see Note below);

   (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

   (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: See continuation sheet.

3. ☒ Applicant's reply has overcome the following rejection(s): See Continuation Sheet.

4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

5. ☒ The a)☐ affidavit, b)☐ exhibit, or c)☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: *See Continuation Sheet.*

6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.

7. ☒ For purposes of Appeal, the proposed amendment(s) a)☒ will not be entered or b)☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____.

Claim(s) objected to: _____.

Claim(s) rejected: *40-61.*

Claim(s) withdrawn from consideration: _____.

PHILLIP GAMBEL, PH.D
PRIMARY EXAMINER
TECH CENTER 1600
10/17/03

8. ☐ The proposed drawing correction filed on _____ is a)☐ approved or b)☐ disapproved by the Examiner.

9. ☐ Note the attached Information Disclosure Statement(s)(PTO-1449) Paper No(s). _____.

10. ☒ Other: *See Continuation Sheet*

Continuation of 2. Note:
the newly added limitation that the protein stimulates T cell proliferation in the presence of an antigen raises new issues that require further consideration and raises the issue of New Matter

Continuation of 3. Applicant's reply has overcome the following rejection(s): it appears that Applicant's reply, had it been entered, would have overcome all rejections of record in Paper No. 21.

Continuation of 5. does NOT place the application in condition for allowance because: as noted supra, the amendment has not been entered, thus the rejections are maintained for the reasons of record .

Continuation of 10. Other: Applicant's Petition under 37 CFR 1.48(a) to delete an Inventor, filed 9/22/03, is acknowledged. The request t correct the inventorship of this nonprovisional application under 37 CFR 1.48(a) is deficient because:
the Declaration submitted has non-initialed changes. A new Declaration should be submitted to correct this deficiency.

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Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

26949 7590 11/20/2003

HESKA CORPORATION
INTELLECTUAL PROPERTY DEPT.
1613 PROSPECT PARKWAY
FORT COLLINS, CO 80525

US ACTION
DUE DATE
Paper Dated
OA Final
Msg. Pt. Dwgs
Appeal Issue Fee
Other

EXAMINER	
ROARK, JESSICA H	
ART UNIT	PAPER NUMBER
1644	

DATE MAILED: 11/20/2003

COPY

2003 DEC -1 RCVD

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/646,561	02/01/2001	Gee--Kee Sim	HKZ-029CPUS	2245

TITLE OF INVENTION: NOVEL FORMS OF T CELL COSTIMULATORY PROTEINS, NUCLEIC ACID MOLECULES, AND USES THEREOF

IM-1-CIPUS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	$665	$0	$665	02/20/2004

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:
A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status is changed, pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above and notify the United States Patent and Trademark Office of the change in status, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check the box below and enclose the PUBLICATION FEE and 1/2 the ISSUE FEE shown above.

☐ Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

FEB 27 2008

PTOL-85 (Rev. 10/03) Approved for use through 04/30/2004.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/646,561	02/01/2001	Gee--Kee Sim	HKZ-029CPUS	2245

26949 7590 11/20/2003

HESKA CORPORATION
INTELLECTUAL PROPERTY DEPT.
1613 PROSPECT PARKWAY
FORT COLLINS, CO 80525

EXAMINER	
ROARK, JESSICA H	
ART UNIT	**PAPER NUMBER**
1644	

DATE MAILED: 11/20/2003

Determination of Patent Term Extension under 35 U.S.C. 154 (b)
(application filed after June 7, 1995 but prior to May 29, 2000)

The Patent Term Extension is 0 day(s). Any patent to issue from the above-identified application will include an indication of the 0 day extension on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Extension is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) system (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (703) 305-1383. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

PTOL-85 (Rev. 10/03) Approved for use through 04/30/2004.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/646,561	02/01/2001	Gee--Kee Sim	HKZ-029CPUS	2245

26949 7590 11/20/2003

HESKA CORPORATION
INTELLECTUAL PROPERTY DEPT.
1613 PROSPECT PARKWAY
FORT COLLINS, CO 80525

EXAMINER	
ROARK, JESSICA H	
ART UNIT	PAPER NUMBER
1644	

DATE MAILED: 11/20/2003

Notice of Fee Increase on October 1, 2003

If a reply to a "Notice of Allowance and Fee(s) Due" is filed in the Office on or after October 1, 2003, then the amount due will be higher than that set forth in the "Notice of Allowance and Fee(s) Due" since there will be an increase in fees effective on October 1, 2003. See Revision of Patent Fees for Fiscal Year 2004; Final Rule, 68 Fed. Reg. 41532, 41533, 41534 (July 14, 2003).

The current fee schedule is accessible from (http://www.uspto.gov/main/howtofees.htm).

If the fee paid is the amount shown on the "Notice of Allowance and Fee(s) Due" but not the correct amount in view of the fee increase, a "Notice of Pay Balance of Issue Fee" will be mailed to applicant. In order to avoid processing delays associated with mailing of a "Notice of Pay Balance of Issue Fee," if the response to the Notice of Allowance is to be filed on or after October 1, 2003 (or mailed with a certificate of mailing on or after October 1, 2003), the issue fee paid should be the fee that is required at the time the fee is paid. If the issue fee was previously paid, and the response to the "Notice of Allowance and Fee(s) Due" includes a request to apply a previously-paid issue fee to the issue fee now due, then the difference between the issue fee amount at the time the response is filed and the previously-paid issue fee should be paid. See Manual of Patent Examining Procedure, Section 1308.01 (Eighth Edition, August 2001).

Effective October 1, 2003, 37 CFR 1.18 is amended by revising paragraphs (a) through (c) to read as set forth below.

Section 1.18 Patent post allowance (including issue) fees.

(a) Issue fee for issuing each original or reissue patent, except a design or plant patent:
By a small entity (Sec. 1.27(a)) $665.00
By other than a small entity $1,330.00

(b) Issue fee for issuing a design patent:
By a small entity (Sec. 1.27(a)) $240.00
By other than a small entity $480.00

(c) Issue fee for issuing a plant patent:
By a small entity (Sec. 1.27(a)) $320.00
By other than a small entity $640.00

Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

Notice of Allowability	Application No.	Applicant(s)	
	09/646,561	SIM ET AL.	
	Examiner	Art Unit	
	Jessica H. Roark	1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *10/17/03 and 11/17/03*.
2. ☒ The allowed claim(s) is/are *40-47, 50-56 and 59-61 (renumbered 1-18)*.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

5. ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
   (a) ☐ The translation of the foreign language provisional application has been received.
6. ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**

7. ☒ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No. ____.
   (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
   (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1☐ Notice of References Cited (PTO-892)
2☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No. _____
4☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5☐ Notice of Informal Patent Application (PTO-152)
6☒ Interview Summary (PTO-413), Paper No. *11172003* .
7☒ Examiner's Amendment/Comment
8☒ Examiner's Statement of Reasons for Allowance
9☐ Other .

DETAILED ACTION

1. Applicant's proposed amendment after final, filed 10/17/2003, has been entered.
Claims canceled: 1-39, 48-49 and 57-58.
Claims currently amended: 40-47, 51-56 and 59-61.
Claims pending: 40-47, 50-56 and 59-61.

Claims 40-47, 50-56 and 59-61 *are under consideration in the instant application.*

EXAMINER'S AMENDMENT

2. An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to Applicant, an amendment may be filed as provided by 37 C.F.R. § 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the Issue Fee.

It is noted that Applicant's response filed 10/17/03 placed the application in condition for allowance based on the record at that time. The Examiner's Amendment is made in lieu of reopening prosecution in order to remedy informalities which were brought to Applicant's attention for the first time in the telephone Interview of 11/17/03. Accordingly, no further extension of time is required to make the Examiner's Amendment which places the Application fully in condition for allowance

3. Authorization for this Examiner's Amendment was given in a telephone interview with Richard J. Stern on 11/17/03.

In the Specification:

4. In the ABSTRACT:
in the 1st line -- canine and feline -- has been added between the "to" and "B7" in the phrase "The present invention relates to B7 proteins" so that the phrase reads "The present invention relates to canine and feline B7 proteins".

5. In the amendment filed 9/3/02 which inserted the related application information in the first line of the specification, -- , now abandoned -- has been inserted following "filed April 17, 1998".

In the Claims:

6. In claim 45, a period has been inserted at the end of the claim.

7. In claim 51, -- ; and recovering said canine or feline B7-2 protein -- has been inserted between the last word of claim 51 and the period.

8. In claim 55, section (a) has been amended by inserting -- from (a), (b) or (c) -- following "molecule" and before "of Claim 41".

9. In claim 56 at the 4th and 6th lines, each occurrence of the word "and" has been changed to -- or --.

10. In claim 56, , -- ; and recovering said canine or feline B7-2 protein -- has been inserted between the last word of claim 56 and the period.

REASONS FOR ALLOWANCE

11. The following is an Examiner's Statement of Reasons for Allowance:

The Examiner's Amendment set forth supra, in conjunction with Applicant's amendment filed 10/17/03, has obviated the previous rejections of record.

Accordingly, the instant claims are deemed allowable.

12. Applicant's Petition under 37 CFR 1.48(a) to delete an Inventor, filed 9/22/03, is again acknowledged. The request to correct the inventorship of this nonprovisional application under 37 CFR 1.48(a) is deficient because: the Declaration submitted has non-initialed changes.

A new Declaration should be submitted to correct this deficiency.

Applicant is reminded that the period for reply to a Notice of Allowability is three months, and that this three-month period is not extendable.

13. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica Roark, whose telephone number is (703) 605-1209. The examiner can normally be reached Monday to Friday from 8:00 to 4:30. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached at (703) 308-3973. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 1600 receptionist whose telephone number is (703) 308-0196.

Papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center number is (703) 872-9306.

Jessica Roark, Ph.D.
Patent Examiner
Technology Center 1600
November 17, 2003

PHILLIP GAMBEL, PH.D
PRIMARY EXAMINER
TECH CENTER 1600
11/17/03

Interview Summary	Application No.	Applicant(s)	
	09/646,561	SIM ET AL.	
	Examiner	Art Unit	
	Jessica H. Roark	1644	

All participants (applicant, applicant's representative, PTO personnel):

(1) *Jessica H. Roark*. (3)_____.

(2) *Richard J. Stern*. (4)_____.

Date of Interview: *17 November 2003*.

Type: a)☒ Telephonic b)☐ Video Conference
c)☐ Personal [copy given to: 1)☐ applicant 2)☐ applicant's representative]

COPY

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.
If Yes, brief description: _____.

Claim(s) discussed: *5,45,55 and 56*.

Identification of prior art discussed: *none*.

Agreement with respect to the claims f)☒ was reached. g)☐ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *Permission given for an Examiner's amendment to correct minor informalities in the above noted claims* .

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

FEB 2 7 2008

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)
In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

ATTN: MAIL STOP AF
PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

Sim, Gee-Kee
Yang, Shumin
Sellins, Karen S.

Serial No.: 09/646,561

Int'l Filing Date: March 19, 1999

National Phase Filed: 02/01/2001

Atty. File No.: IM-1-C1-PUS
(formerly IIKZ-029CPUS)

For: "CANINE AND FELINE B7-2 NUCLEIC ACID MOLECULES AND USES THEREOF"

Group Art Unit: 1644

Examiner: Jessica H. Roark

SECOND AMENDMENT AND RESPONSE AFTER FINAL
Under (37 CFR 1.111)

CERTIFICATE OF FACSIMILE TRANSMISSION

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING FACSIMILE TRANSMITTED TO EXAMINER JESSICA ROARK, FAX NO. (703)-872-9306, ADDRESSED TO MAIL STOP AF, COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VIRGINIA 22313-1450, THIS 17TH DAY OF OCTOBER 2003.

HESKA CORPORATION

By: Susan A. Gordon
Susan A. Gordon

MAIL STOP AF
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

In response to the Final Office Action mailed from the U.S. Patent and Trademark Office on June 18, 2003, in conjunction with the phone conversations with the Examiner on October 16, 2003, Applicants request reconsideration based on the following amendments and remarks. Applicants also attach a petition for a one-month extension of time, thereby extending the period for reply from September 18, 2003 until October 18, 2003. Applicants hereby authorize the USPTO to charge the $55 one-month extension fee to Deposit Account No. 081930.

OK to ENTER
11/5/03 JHR

OFFICIAL

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CENTRAL FAX CENTER
OCT 20 2003

FEB 27 2008

Hewlett-Packard Company
3404 East Harmony Road
Mail Stop 35
Fort Collins, CO 80528
www.hp.com

Joni Boucher
Legal Administrator
Legal Department
Intellectual Property Administration

970.898.4956 Tel
970.898.0640Fax
catherine.grow@hp.com

November 26, 2003

Heska Corporation
Intellectual Property
1613 Prospect Parkway
Fort Collins, CO 80525

This document was sent to the Hewlett-Packard Company from the US PTO but it has your address on it. I believe it possibly should go to you, since I can not match the application number, docket number or inventor to any records we have. Please feel free to contact me if you have questions.

Sincerely,

Joni Boucher
Legal Administrator

ATTN: Mail Stop ISSUE FEE
PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

Sim, Gek-Kee
Yang, Shumin
Sellins, Karen S.

Serial No.: 09/646,561

Filed: February 1, 2001

Atty. File No.: IM-1-C1-PUS

For: "CANINE AND FELINE B7-2 NUCLEIC ACID MOLECULES AND USES THEREOF"

Group Art Unit: 1644

Examiner: Roark, Jessica H.

ISSUE FEE TRANSMITTAL AND REQUEST FOR CORRECTION TO TITLE

CERTIFICATE OF MAILING

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE U.S. POSTAL SERVICE AS FIRST CLASS MAIL, ADDRESSED TO MAIL STOP ISSUE FEE, COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450, THIS 12TH DAY OF FEBRUARY 2004.

HESKA CORPORATION

By: Susan A. Gordon

Susan A. Gordon

Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Notice of Allowance and Issue Fee Due mailed on November 20, 2003, Applicants submit herewith check no. 068813 in the amount of $680 in payment of the Issue Fee ($665) and five (5) advance order copies ($15). In the event of a deficiency or overpayment in these fees, please debit or credit Deposit Account 081930.

The Examiner has requested a new Declaration, which is also enclosed.

Applicants request the title on the Notice of Allowance and Issue Fee Due be corrected to note the amended title: "CANINE AND FELINE B7-2 NUCLEIC ACID MOLECULES USES THEREOF." In support of this amended title, Applicants enclose copies of a Preliminary Amendment and Response to Restriction Requirement, filed August 23, 2002 (date-stamped in at

OIPE on September 3, 2003) with requested amendment to title; and an Office Action dated September 19, 2002, wherein Applicant's September 3, 2003 amendment is acknowledged.

Respectfully submitted,

Dated: February 12, 2004

By: Richard J. Stern

Richard J. Stern, Ph.D.
Registration No. 50,668
Heska Corporation
1613 Prospect Parkway
Fort Collins, Colorado 80525
Telephone: (970) 493-7272
Facsimile: (970) 491-9976

COPY

RULE 63 (37 CFR § 1.63)
DECLARATION
FOR PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled "CANINE AND FELINE B7-2 NUCLEIC ACID MOLECULES AND USES THEREOF", the specification of which was filed on March 19, 1999, receiving Serial No. 09/646,561, and identified as Attorney File No. IM-1-C1-PUS (formerly HKZ-039CPUS).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to patentability in accordance with 37 CFR §§ 1.56(a) and (b) as set forth on the attached sheet indicated Page 3 hereof and which I have read.

I hereby claim foreign priority benefits under 35 U.S.C. 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s) Number	Country	Day/Month/Year Filed	Priority Claimed Yes	No
PCT/US99/06187	PCT	19 March 1999	Yes	

I hereby claim the benefit under 35 U.S.C. 120 of all United States and PCT international applications listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in such prior applications in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information material to patentability in accordance with 37 CFR §§ 1.56(a) and (b) which occurred between the filing date(s) of the prior application(s) and the national or PCT international filing date of this application:

Application Serial No.	Filing Date
09/062,597	17 April 1998

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

FEB 2 7 2008

1) Inventor's Signature _____ Date 10/17/03

Inventor's Name (typed): Shumin Yang, Ph.D.

Citizenship: United States of America

Residence: 765 San Antonio Road, #51
Palo Alto, California 94303

Post Office Address: Same as Residence

2) Inventor's Signature _____ Date _____

Inventor's Name (typed): Gek-Kee Sim, Ph.D.

Citizenship: United States of America

Residence: 543 Franklin St.
Denver, Colorado 80218

Post Office Address: Same as Residence

37 CFR §§ 1.56(a) and (b)
DUTY TO DISCLOSE INFORMATION MATERIAL
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(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is cancelled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

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A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.*

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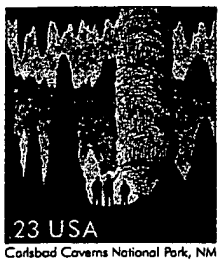

Heska Corporation
Intellectual Property Dept.
1613 Prospect Parkway
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DOCKETED

DATE: February 12, 2004
APPLICANT: Gek-Kee Sim; Shumin Yang;
Karen S. Sellins
SERIAL NO.: 09/646,561
ATTY. FILE NO.: IM-1-C1-PUS
TITLE: CANINE AND FELINE B7-2 NUCLEIC ACID MOLECULES USES THEREOF"

RECEIPT IS HEREBY ACKNOWLEDGED OF: Issue Fee Transmittal and Request for Correction to Title; new Declaration signed by inventor; copy of 8/23/02 Preliminary Amendment and Response to Restriction Requirement (1st page and postcard receipt); copy of Office Action (pages 1 and 2), dated 9/19/02; check no. 068813 in the amount of $680; deposited with the U.S. Postal Service as First Class Mail this date.

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IM-1-C1-PUS

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/646,561	02/01/2001	Gec--Kee Sim	HKZ-029CPUS	2245

26949 7590 04/25/2005

HESKA CORPORATION
INTELLECTUAL PROPERTY DEPT.
1613 PROSPECT PARKWAY
FORT COLLINS, CO 80525

EXAMINER	
ROARK, JESSICA H	

ART UNIT	PAPER NUMBER
1644	

DATE MAILED: 04/25/2005

RJS/CTV

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Please find below and/or attached an Office communication concerning this application or proceeding.

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09/646,561

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.

EXAMINER

ART UNIT	PAPER
1644	04122005

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

Applicant's submission of the requested Oath / Declaration, filed 2/17/04, is acknowledged.

Applicant's Request for the Correction of Title, previously submitted, is acknowledged.
U.S. Patent No. 6,852,847 has been issued with the correct Title.

The examiner aplogizes for any inconvenience to applicant in this matter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Gambel whose telephone number is (571) 272-0844. The examiner can normally be reached Monday through Thursday from 7:30 am to 6:00 pm. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (571) 272-0841.

The fax number for the organization where this application or proceeding is assigned is 571-273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PHILLIP GAMBEL

Phillip Gambel, PhD.
Primary Examiner
Technology Center 1600
April 12, 2005

FEB 27 2008

IM-1-C1-PUS

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1st page + claims

(12) **United States Patent**
Sim et al.

(10) **Patent No.: US 6,852,847 B1**
(45) **Date of Patent: Feb. 8, 2005**

(54) **CANINE AND FELINE B7-2 NUCLEIC ACID MOLECULES AND USES THEREOF**

(75) Inventors: **Gek-Kee Sim**, Fort Collins, CO (US); **Shumin Yang**, Palo Alto, CA (US); **Karen S. Sellins**, Fort Collins, CO (US)

Petitioned to have her removed.

(73) Assignee: **Heska Corporation**, Fort Collins, CO (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/646,561**

(22) PCT Filed: **Mar. 19, 1999**

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§ 371 (c)(1),
(2), (4) Date: **Feb. 1, 2001**

(87) PCT Pub. No.: **WO99/47558**

PCT Pub. Date: **Sep. 23, 1999**

(Under 37 CFR 1.47)

Related U.S. Application Data

(63) Continuation-in-part of application No. 09/062,597, filed on Apr. 17, 1998, now abandoned.
(60) Provisional application No. 60/078,765, filed on Mar. 19, 1998.

(51) **Int. Cl.**[7] **C07H 21/04**; C12N 15/09; C12N 15/12; C12N 15/63

(52) **U.S. Cl.** **536/23.5**; 536/23.1; 514/44; 435/69.1; 435/455; 435/252.3; 435/320.1

(58) **Field of Search** 536/23.1, 23.5; 514/44; 435/69.1, 455, 252.3, 320.1

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* cited by examiner

Primary Examiner—Phillip Gambel
Assistant Examiner—Jessica H. Roark
(74) *Attorney, Agent, or Firm*—Heska Corporation

(57) **ABSTRACT**

The present invention relates to canine and feline B7 proteins; to B7 nucleic acid molecules, including those that encode such B7 proteins; to antibodies raised against such B7 proteins; and to therapeutic compounds that regulate B7 function. The present invention also includes methods to identify and obtain such proteins, nucleic acid molecules, antibodies, and inhibitory compounds. Also included in the present invention are therapeutic compositions comprising such proteins, nucleic acid molecules, antibodies and/or inhibitory compounds as well as the use of such therapeutic compositions to regulate an immune response in an animal.

18 Claims, No Drawings

-continued

ggtacgtagg tgctgcttcc atgaagag 28

<210> SEQ ID NO 65
<211> LENGTH: 35
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic Primer

<400> SEQUENCE: 65

cccctaggtt aaaactgtgt agtactgttg tcgcc 35

What is claimed is:

1. An isolated nucleic acid molecule selected from the group consisting of:

(a) a nucleic acid molecule having a nucleic acid sequence that is at least about 95 percent identical over the full length of a nucleic acid sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:9, SEQ ID NO:16, SEQ ID NO:19, SEQ ID NO:25 and SEQ ID NO:28, wherein the isolated nucleic acid molecule encodes a protein that elicits an immune response against a canine protein having the amino acid sequence of SEQ ID NO:7, SEQ ID NO:17 or SEQ ID NO:28 or wherein said encoded protein, in conjunction with engagement of a T cell receptor with a major histocompatability molecule complexed with a peptide, stimulates T cell proliferation; and

(b) a nucleic acid molecule fully complementary to the nucleic acid molecule of (a).

2. An isolated nucleic acid molecule selected from the group consisting of:

(a) a nucleic acid molecule having a nucleic acid sequence that is at least about 95% identical over the full length of SEQ ID NO:33, wherein the isolated nucleic acid molecule encodes a protein that elicits an immune response against a protein having the amino acid sequence of SEQ ID NO:34 or wherein said encoded protein, in conjunction with engagement of a T cell receptor with a major histocompatability molecule complexed with a peptide, stimulates T cell proliferation;

(b) a nucleic acid molecule comprising a nucleic acid sequence encoding a protein that is at least about 95% identical over the full-length of SEQ ID NO:34, wherein said encoded protein elicits an immune response against a protein having the amino acid sequence of SEQ ID NO:34 or wherein said encoded protein, in conjunction with engagement of a T cell receptor with a major histocompatability molecule complexed with a peptide, stimulates T cell proliferation;

(c) a nucleic acid molecule comprising the nucleic acid sequence of SEQ ID NO:30; and,

(d) a nucleic acid molecule fully complementary to the nucleic acid molecule of (a), (b) or (c).

3. The isolated nucleic acid molecule of claim 1, wherein said nucleic acid molecule comprises a nucleic acid sequence selected from the group consisting of:

(a) SEQ ID NO:6, SEQ ID NO:9, SEQ ID NO:16, SEQ ID NO:19, SEQ ID NO:25, SEQ ID NO:28; and

(b) a nucleic acid sequence fully complementary to the nucleic acid sequence of (a).

4. The isolated nucleic acid molecule of claim 2, wherein said nucleic acid molecule comprises a nucleic acid sequence is selected from the group consisting of:

(a) SEQ ID NO:30, SEQ ID NO:33; and

(b) a nucleic acid sequence fully complementary to the nucleic acid sequence of (a).

5. An isolated nucleic acid molecule selected from the group consisting of:

(a) a nucleic acid molecule having a nucleic acid sequence encoding a B7-2 protein that is at least about 95% identical over the full length of an amino acid sequence selected from the group consisting of SEQ ID NO:7, SEQ ID NO:17 and SEQ ID NO:26, wherein said encoded B7-2 protein elicits an immune response against a protein having the amino acid sequence of SEQ ID NO:7, SEQ ID NO:1 or SEQ ID NO:28 or wherein said encoded B7-2 protein, in conjunction with engagement of a T cell receptor with a major histocompatability molecule complexed with a peptide, stimulated T cell proliferation; and

(b) a nucleic acid molecule fully complimentary to the nucleic acid molecule of (a).

6. The isolated nucleic acid molecule of claim 5, wherein said encoded B7-2 protein has an amino acid sequence selected from the group consisting of SEQ ID NO:7, SEQ ID NO:17 and SEQ ID NO:26.

7. The isolated nucleic acid molecule of claim 2, wherein said nucleic acid molecule comprises a nucleic acid sequence encoding a protein having the amino acid sequence of SEQ ID NO:31 or SEQ ID NO:34.

8. An isolated nucleic acid molecule selected from the group consisting of:

(a) an isolated nucleic acid molecule consisting of a fragment of SEQ ID NO:6, SEQ ID NO:9, SEQ ID NO:16, SEQ ID NO:19, SEQ ID NO:25 or SEQ ID NO:28, wherein said fragment is greater than about 50 nucleotides of SEQ ID NO:6, SEQ ID NO:9, SEQ ID NO:16, SEQ ID NO:19, SEQ ID NO:25 or SEQ ID NO:28; and

(b) a nucleic acid molecule fully complementary to the nucleic acid molecule of (a).

9. A composition comprising the isolated nucleic acid molecule as specified in any one of claims 1–8 and an excipient.

10. A method to produce a canine or feline B7-2 protein, said method comprising culturing a cell capable of expressing said B7-2 protein, said B7-2 protein being encoded by a nucleic acid molecule having a nucleic acid sequence that is at least about 95% identical over the full length of a nucleic acid sequence selected from the group consisting of SEQ ID

NO:6, SEQ ID NO:9, SEQ ID NO:16, SEQ ID NO:19, SEQ ID NO:25 and SEQ ID NO:28, wherein said encoded protein clicits an immune response against a protein having the amino acid sequence of SEQ ID NO:7, SEQ ID NO:17 or SEQ ID NO:28 or wherein said encoded protein, in conjunction with engagement of a T cell receptor with a major histocompatability molecule complexed with a peptide, stimulates T-cell proliferation and recovering said canine or feline B7-2 protein.

11. The method of claim **10**, wherein said nucleic acid molecule encodes a B7-2 protein that is at least about 95% identical over the full length of an amino acid sequence selected from the group consisting of SEQ ID NO:7, SEQ ID NO:17 and SEQ ID NO:26.

12. The method of claim **10**, wherein said nucleic acid molecule comprises a nucleic acid sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:9, SEQ ID NO:16, SEQ ID NO:19, SEQ ID NO:25 and SEQ ID NO:28.

13. The method of claim **10**, wherein said nucleic acid molecule comprises a nucleic acid sequence that encodes a protein having an amino acid sequence selected from the group consisting of SEQ ID NO:7, SEQ ID NO:17 and SEQ ID NO:26.

14. A method to produce a canine or feline B7-2 protein said method comprising:

(a) culturing a cell comprising the isolated nucleic acid molecule from (a), (b) or (c) of claim **2**, wherein said cell is capable of expressing said B7-2 protein; and

(b) recovering said canine or feline B7-2 protein.

15. A method to produce a canine or feline B7-2 peptide, said method comprising culturing a cell capable of expressing said B7-2 peptide, said B7-2 peptide being encoded by a nucleic acid molecule consisting of a fragment of SEQ ID NO:6, SEQ ID NO:9, SEQ ID NO:16, SEQ ID NO:19, SEQ ID NO:25 or SEQ ID NO:28, wherein said fragment is greater than about 50 nucleotides of SEQ ID NO:6, SEQ ID NO:9, SEQ ID NO:16, SEQ ID NO:19, SEQ ID NO:25 or SEQ ID NO:28; and recovering said canine or feline B7-2 protein.

16. A recombinant molecule comprising a nucleic acid sequence as set forth in any one of claims **1–8** operatively linked to a transcription control sequence.

17. A recombinant virus comprising a nucleic acid molecule as set forth in any one of claims **1–8**.

18. A recombinant cell comprising a nucleic acid molecule as set forth in any one of claims **1–8**.

* * * * *